

microdactyla, only very much larger. I have taken one or two imagines each year. I now have eight specimens altogether. I think that it must feed on some low plant. I have not yet been able to trace it. There are golden-rod, thyme, marjoram, and *Hieracium pilosella*, growing on the ground, whilst some distance away from the locality is *Eupatorium*, but I feel certain that this is not the foodplant, and it is very seldom that *microdactyla* moves away from its foodplant. The ova were large, and of a very pale-green colour.

[In 1834, Stephens made an attempt to apply Hübner's classification to the British "plumes" (*Illus. Brit. Ent. Haust.*, iv., pp. 370 *et seq.*). Among other of Hübner's species which he thought he recognised in Britain was *carphodactyla*, which, however, he misspelled "*carpodactyla*," but corrected to *carphodactyla* (*op. cit.*, p. 424). At the time, *osteodactylus*, as such, was not known as a British species, nor was it, indeed, separated from *carphodactyla* until 1841, when Zeller distinguished it from its allies, and named it. It was then assumed that the *carphodactyla* of Stephens was Zeller's species, and the latter name disappeared from our British list, *osteodactylus* taking its place. There has been no suspicion that this was not entirely the case, until some few months ago, when Mr. Purdey kindly offered to get ova of *H. osteodactylus*, a well-known Folkestone species, for description in the account of the "plumes," now in course of publication in the *Natural History of British Lepidoptera*. The eggs were obtained and duly described, but the resulting larvæ refused to feed on golden-rod. Even then suspicion was not aroused until this summer, when the imagines struck Mr. Purdey as being something different, and his belief that they were not *osteodactylus*, approached certainty, and a descriptive note from Purdey to Mr. Sich, led the latter to write to us suggesting the species as being possible *carphodactyla*. In due course the imagines were submitted to Dr. Chapman, and proved to be this species. It is very like *osteodactylus*, but more marked with black, like *microdactyla*, the larva feeding on *Conyza squarrosa*. Our British series of *osteodactylus* want carefully looking over, and, as the new British species is a rather common one, and we believe pretty regularly, bred on the continent, there should be little trouble in finding the larva.—ED.]

Notes on the genus *Gonatopus* (Dryininæ).

By A. J. CHITTY, M.A., F.E.S.

The admirable article of Dr. Kieffer on the British *Gonatopi*, translated by Mr. Donisthorpe in the January number of the *Ent. Record*, is of the greatest interest, and will, I am sure, induce others to study these remarkable little insects. Curiously, the *Annals of Scottish Natural History*, for January, has also a list of the Scottish *Bethylidae* and *Dryininæ*, but no records of *Gonatopus*, two of which I can now add to the Scottish list.

For some time past I have had in my possession five or six distinct species of *Gonatopus*, from various parts of the country, waiting to be named; nearly all have, at some time or other, been identified, for past owners, as *pedestris*, Daln., though abundantly distinct from one another. Thanks to Dr. Kieffer these can now be named, and I am at the same time (thanks to the kindness of Professor Poulton) able to restore two more species of *Gonatopus* to the British list, *viz.*, *oratorius*,

West., and *ljunghii*, West. (possibly = *pedestris*, Dalm.), and to state that *G. sociabilis*, Kieff., of which a full description appeared in the January number, is really *G. sepsoides*, West. Westwood's three species were inadequately described in Loudon's *Magazine of Natural History*, vi., p. 496, fortunately, however, the types remain in the Oxford Museum. It remained to Dr. Kieffer to render the species of the genus intelligible, but Walker's calm proceeding in sinking Westwood's three insects, structurally quite unlike, to synonyms of the so-called *pedestris* (really *bicolor*, Hal. teste Kieff.), is most remarkable. This achievement is to be found in the *Ent. Mo. Mag.*, iv., p. 412.

The main characters of the ♀s in both *Gonatopus* and *Antaeon*, the two principal genera of the *Dryiniinae*, lie in the chelæ. These chelæ or "pincers" ("la pince" of Kieffer) form beautiful objects under the microscope, and, in *Gonatopus*, there appears to be no great difficulty in identifying the species by them. In the genus *Antaeon* the immense number of the species makes it very easy for any one attempting to use the tables to lose his way. One of the branches of the chelæ, viz., the outer one, appears to be a development of a claw, and to have become twisted to one side, while the inner branch is a development of the fifth tarsal joint; the empodium forms the apex of the leg when the pincers are closed, but, whether the insect walks on the external chelæ or on the empodium with the claws lying folded up backwards along the remaining joints of the tarsi, to some of which the inner branch of the chelæ is at times soldered, I am unable to say—see, however, *Ent. Mo. Mag.*, ii., p. 221, from which the former appears to be the case. The chelæ may be armed with processes of various kinds; in some cases the processes are teeth, like the teeth of an ordinary insect's claw, in other cases they are membranous, reminding one somewhat of suckers; they are then called "lamelles"* (plates); in other cases they are in the nature of bristles, and, in still other cases, they are simply hairs; hairs and plates often co-exist, in which case I find the hairs very difficult to see. One of the chelæ, especially the outer branch, is often unarmed, and the space occupied by the processes varies greatly, and, where the inner chela has a decided bend, the bend at least is usually destitute of processes, which begin again near the tip.

The earlier writers seem to have paid no attention to the characters derived from the chelæ, and the result is that, without types, and most, if not all, of those of Walker, have been destroyed, the names must, in many cases, be abandoned. In fact, the only names in *Gonatopus* that survive at present for British species, are *bicolor*, Hal., Curtis (*Brit. Ent.*, pp. 206, 207), and those of Westwood, which I am now restoring. Whether *bicolor*, Hal., should not be *bicolor*, Curt., seems a question; the name is not given even as a synonym by Marshall, having been included by Walker as a colour variety of *Dicondylus pedestris*, and possibly with Haliday's consent; but it appears to have been published in Curtis's *British Insects*, and to have been, so far as Haliday was concerned, only a MS. name.

* "Lamelles" is, I think, used of the "teeth" of a comb. We have, unfortunately, no suitable English word to distinguish this sense from "dentes," teeth, in the ordinary sense.

To admit of Westwood's species, Dr. Kieffer's table should, I think, be varied as follows :

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| 1. Omit "vertex strongly excavate" before the number 3. | |
| 2. For " <i>sociabilis</i> , Kieff.," read " <i>sepsoides</i> , West." | |
| 3. For "3, etc.," read: "3. Vertex slightly depressed, but not strongly excavated" | <i>ljunghii</i> , West. |
| Vertex strongly excavated | 3a. |
| 3a. Thorax entirely red (rufotestaceous), second node transversely striate at base | <i>oratorius</i> , West. |
| Thorax partly black, second node not transversely striate at base | 3bis." |

and then continue at 3 in the table.

The following are the localities of the British species so far as I am able to determine them. Without types, or specimens compared with types, certainty seems almost impossible:—*G. striatus*, Kieff. (1) Brandon (Chitty), May 6th, 1906. *G. sepsoides*, West. (*sociabilis*, Kieff.) (2) Black Gang Chine (Westwood), August, 1831; Camber Sandhills (Donisthorpe); Lymington (Morley), August 15th, 1901; Gullane Links, near Edinburgh (W. Evans), August 29th, 1900; the British Museum adds Deal; near London; Bournemouth; Lowestoft; and another species without locality taken in 1879 (F. Smith). *G. ljunghii*, West.: Wimbledon Common (Westwood). *G. oratorius*, West.: Ripley Common (Westwood). *G. distinguendus*, Kieff. (2): Kilmore (Beaumont), August 11th and 15th, 1898. *G. bicolor*, Curt.: (1) Plumstead (Beaumont), October 21st, 1893; (1) Luffness Links, near Edinburgh (W. Evans), August 22nd, 1896; (1) Fielden, Herts (Morley), on genista, August 9th, 1903; [Deal (Marshall)]. *G. distinctus*, Kieff. (3) Oxshott (Beaumont), July 30th, 1898, June 13th, 1900, and June 2nd, 1901; Perrau Porth Newquay (E. B. Nevinson). *G. marshalli*, Kieff.: Isle of Purbeck; Swansea (? Swanage) (Marshall), (*André*, vol. ix., p. 121). Marshall's original MS. description and plate of this insect appear to have been inaccurate, see *André*, ix., p. 510.

A few further notes may be useful. As to *striatus*: the pilosity of the second node of the thorax is badly developed in my specimen, but the insect cannot be any other described species. It was found on a sandy place where, no doubt, ants would be running. [I may here point out that on p. 8 of this volume, *subpilosus* and *substriatus* should be *sub*, i.e., under the heading of, *pilosus*, and *sub*, *striatus*.

G. sepsoides: I compared Mr. Morley's specimen with both the types of *sociabilis* and *sepsoides*, which I have had lent me. The former type is now broken (in the post). The following corrections appear to me necessary in the description (see p. 7 *ante*): l. 2, for "tarsi" read "legs"; l. 5, for "tarsi" read "tibiæ"; l. 10, after "long" insert "again." The ninth joint of the antenna appears to me distinctly longer than broad. Mr. Morley's specimen was named *pedestris* by Mr. Marshall; I have always referred it doubtfully to *pilosus*, Thoms., as I did Mr. Donisthorpe's specimen. Thomson is not, however, likely to have made a mistake as to the pilosity of the 2nd thoracic node, but his description of *pilosus*, curiously, fits in with my specimens in other respects; anyhow, Westwood's name has priority. This is the commonest British species, and it appears to be spread over the whole country in suitable localities. There is a most interesting note of Holiday's on what is possibly this insect, but more likely the next but two, in the *Ent. Mo. Mag.*, ii., p. 221, sub. tit. *Dryinus*

pedestris. He first found it near Darenth Wood, in company with some *Myrmicæ*, and he says it occurs in Ireland on the sandhills of the coast. Once he saw four ants carrying off a *Dryinus* (*Gonatopus*), but his approach frightened three away, and the remaining ant and the *Gonatopus* fought without either party getting an advantage.

G. ljunghii: This species is hardly likely still to occur on Wimbleton Common, but it might be found in Richmond Park on sandy spots. I am unable to distinguish it from the description of *G. pedestris*, Dalm., by Kieffer, except by the dark posterior coxæ, possibly the head is not so level. It is better for the present to preserve Westwood's name, even if it has not priority.

G. oratorius: The type of this is badly broken. It ought to be possible still to take this insect on the Surrey commons. Its colour renders it very distinct.

G. bicolor: This is the *G. nigrirentis* of Nees and Marshall's *Catalogue*. I cannot understand how it ever got mixed with *pedestris*, i.e., *distinguendus*, Kieff., and *distinctus*, Kieff., in Marshall's collection, as it is structurally very distinct from them. It is, however, very variable in colour. Marshall's MS. description adopted by Dr. Kieffer in the first instance, is inaccurate, see *Audré*, p. 508 (Kieffer); the 2nd thoracic node is "distinctement striolé en travers postérieurement," as there pointed out. The variation in colour extends to the first node of the thorax, and the legs, as stated by Walker (*Ent. Mo. Mag.*, iv., p. 412). Possibly Haliday's note, quoted above, applies to this species. If the insect is myrmecophilous, the variation of colour is intelligible, as it would resemble different ants in its different forms, compare *Volucella bombylans* parasitic on *Bombi*.

G. distinguendus: In my two specimens, the hind coxæ have a dark spot above. They are the most slender of the specimens in my collection.

G. distinctus: In my specimens the face is of the same colour as the base of the antennæ.

The Scotch *Gonatopi* from Mr. W. Evans are the first recorded from that country.

I ought to correct my record on p. 161 of the last volume, the Proctotrypid insect there recorded from Whitstable is, I find after all, *Epyris nigra*, which occurs all over that district of Kent. This is not the same insect as *Goniozus claripennis*, which I have taken at Deal as there stated. Besides this, *Ponea punctatissima* is, after all, *P. contracta*.

Habits of *Sciapteron tabaniforme*.

By DR. T. A. CHAPMAN.

As Mr. P. C. Reid's query about this species is not likely to be answered from English material, I may venture to say that I found imagines and pupæ in Norway, in 1898 (*Ent. Mo. Mag.*, 1899, p. 107). Insects, or traces of them, occurred in aspens at ground level, and up to four or five feet (or as high as I could comfortably examine), on trees of six or eight inches in diameter, always on living trees, and always where they had received some injury. I recollect one where there was exposed wood, and the bark in its usual way trying to grow over it, but much hindered by the injury done to it by the larva of